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ABSTRACT

A college degree is no longer the one-way ticket to success and fortune that it was considered in the past. This document deals with three specific aspects of adjustment of manpower production to demands for manpower: (1) What responses are being made by the academic community and by state governments to problems of changing demand for college-level manpower? (2) What types of manpower information are available to assist in rational educational planning? (3) What can educational institutions and agencies do to improve the adaptation of postsecondary education to the needs of society and of the individual? A mere statistical response to needs for information about manpower supply and demand provides no guarantee of operational application. Manpower projections, knowledge of new delivery systems, know-how in techniques for speeding up or improving the training of personnel in a given profession, development of barometers for reading early symptoms of change in anticipated manpower requirements are some ingredients of a comprehensive program in manpower and education. Leadership and informed judgment in application are needed to translate them into practice. (Author/MJM)

# Can Postsecondary Education Adjust To A Changing Job Market?

A college degree is no longer the one-way ticket to success and fortune that it was considered in the past. Today, not every college graduate has a job waiting for him after commencement.

Predictions of an oversupply of college and university teachers have come true in some disciplines. Changes in the economy, national priorities, questionable bases for estimates of demand, and cutbacks in research and development funds have affected engineers. The case of elementary and secondary teacher supply and demand, highlighted on pages four and five, illustrates yet another disparity between supply and demand.

The disparity between production of graduates and suitable jobs for them in some fields begins to look less like a temporary phase and more like a persistent problem for all who work with higher education. Students who want to make a rational career choice are concerned; institutions attempting to maintain stable enrollments, the federal government, and state legislators who want to allocate state resources most effectively are all concerned about a rapidly changing job market situation which is difficult to analyze, much less control.

Whatever the anticipated duration of the current placement problem, it has focused sharply on continuing issues about planning for postsecondary education. Can postsecondary institutions respond to a rapidly changing job market and how shall their response be determined? Can they do so by planning their curriculum and programs on projections of need for manpower in certain areas, or should they respond, after the fact, to the long-term regulating function of supply and demand? Rational planning means curricular decisions based on a number of variables—the role of institutional and faculty aspirations, of student demands, of society's needs. Traditionally, priorities have favored first the institutions, second the students, and third society. There is evidence that the balance of priorities needs adjustment if postsecondary education is going to satisfy the needs of the late 20th century.

This edition of *Issues in Higher Education* will deal with three specific aspects concerning adjustment of manpower production to demands for manpower:

1. What responses are being made by the

academic community and by state governments to problems of changing demand for college-level manpower?

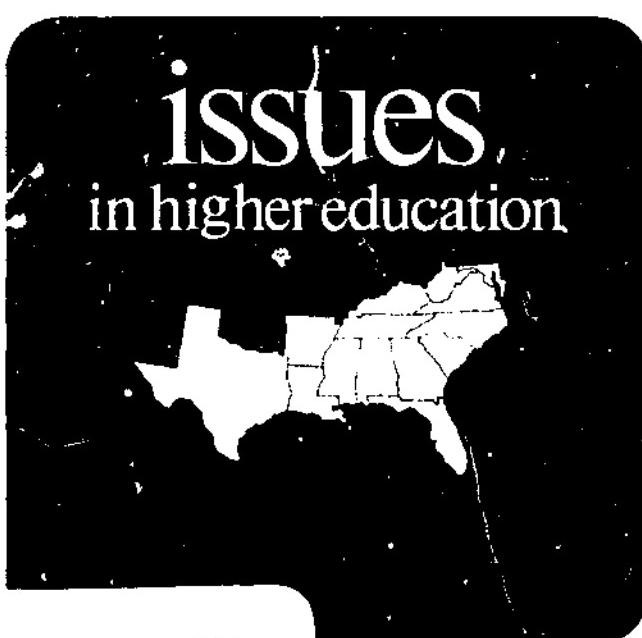
2. What types of manpower information are available to assist in rational educational planning?
3. What can educational institutions and agencies do to improve the adaptation of postsecondary education to the needs of society and of the individual?

## ADJUSTMENTS TO CHANGING MANPOWER NEEDS

### Adjustments by Individuals

According to free enterprise economics, if a market situation gets out of kilter because of individual decisions, it may also return to equilibrium in the same manner. For college-level jobs this is true, however, only if the student facing the choice of a career has adequate information about career opportunities so that he may make academic choices which will be valid for him in the long run.

Given the limited amount of available information on occupational opportunity and the resulting



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number of uninformed career choices, it is not surprising that the country's manpower system should be out of adjustment from time to time in particular areas.

Indications of individual adjustments and increased awareness of the job market do come from reports of substantial enrollment gains in social work and the health professions and with decreased enrollment in the physical sciences, engineering and education. Whether these shifts in enrollment will have a short- or long-term effect enhancing the individual's future employability is uncertain. It is reasonable to expect however, that the recent influx of graduates holding degrees in specialized areas may hinder the liberal arts graduate's employability.

The "bumping" of less educated persons by the more highly or specially educated for jobs which did not previously require advanced education may have serious effects by reducing the flexibility of the job market, causing hardship and dissatisfaction among the less educated. Meanwhile, the more educated person holding the "upgraded" job may suffer from job dissatisfaction because of the under-utilization of his skills. This situation may be countered in part by the increasing number of younger college-educated people who find trade or craft positions more attractive than competing in the traditional college job market.

If the liberal arts graduate is having employment difficulties in today's job market, an inadequate knowledge of his own career interests and prospects for employment may account for much of the difficulty. This may be due in part to a single-purpose manpower policy focusing mainly on the "hardcore" unemployed which attempts to "turn tax-eaters into tax-payers". The federal government's role in this situation is questioned by a recent statement of Robert F. Herrick, President of the College Placement Council, Inc., who notes:

An evidence of disinterest on the part of Washington in the career counseling and placement of graduates of four-year institutions is the failure to provide any funds for these purposes in the recently enacted Omnibus Education Bill. Although specific appeals were made by the Council to appropriate committees of Congress to include such support, it was provided for students only through the two-year level and specifically negated for those attaining four-year degrees. Similarly, the Departments of Education and Labor could make significant contributions to the solution of the problem by making more sophisticated and much more current analyses of supply and demand. But the government's present concentration on the career development aspects of postsecondary education only to the two-year degree level (worthy though that is) is some measure of bias we must all overcome to attain Washington's moral and financial support for our goals.

#### **Adjustment by Institutions and Educational Systems**

Few colleges and universities have elevated the topic of career consideration to the level of curricular offerings, though postsecondary institutions are generally organized to provide counseling and placement services. Georgia Institute of Technology serves as an exception where significant progress has been made recently in introducing a career analysis course in the senior year. The course familiarizes students with sources of information on occupations, employment trends and the career ladder concept. Most important, it forces the student to analyze his own career aptitudes and potentials. For maximum effect, introductory career analysis courses also should be tried at the freshman and sophomore levels.

The vast increases in proprietary school enrollments and the rapid growth in two-year institutions offering vocational programs are due in part to their greater program flexibility and direct relationship to the world of work. Four-year institutions, in particular, will need to re-examine their course offerings and provide more experiences which are work-related if they are to maintain their enrollments. At the advanced degree level, the 130 to 150 additional institutions reported to be planning the initiation of doctoral offerings need seriously to consider the effective demand for their graduates.

Institutions failing to adapt to the need for integrated career-academic planning are likely to find their students disappearing. In some parts of the nation, precedent has been set for outside agencies to effect change in institutions by making them more responsive to altered job market situations.

The governor's office in Michigan, in issuing guidelines for the preparation of 1973-74 budgets, suggested that "enrollment quotas for state support for specific academic disciplines as well as the total system should be considered." Further indications are that Michigan colleges and universities may be required to begin reporting such data as "the proportion of students finding career or advanced education placement within six months of graduation," the "mean entry level salary of graduates" and the "proportion of students finding educationally related career placement within six months".

At the sub-baccalaureate level, a new law in Illinois requires two-year schools to fill 30 percent of their programs with vocational courses instead of the previously required 15 percent.

Regulations like these could miss their mark by forcing premature decisions to cut off or expand programs. The Michigan and Illinois actions do

indicate, however, the degree to which some state governments are concerned that institutions become more aware and responsive to the vocational implications of their curricular offerings.

State-wide coordinating boards have begun to collect labor market information for state-wide planning or for dissemination to institutions for use in the initiating or cutting back of program offerings.

State-wide inquiries into supply and demand for college graduates have recently been released in Alabama and Georgia, and federal research support has aided in the completion of manpower studies in California and Illinois. A concerted effort to relate degree information to demand estimates in a meaningful manner has yet to be made in most states.

Table I

**Examples of Available Supply and Demand Information. College Level Manpower.  
United States and Southern Region**

|                                                                                                                    | Social and<br>Welfare<br>Workers | Aerospace<br>Engineers | Civil<br>Engineers | Marketing<br>Research<br>Workers |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------|--------------------|----------------------------------|
| <b>Demand Information</b>                                                                                          |                                  |                        |                    |                                  |
| National:                                                                                                          |                                  |                        |                    |                                  |
| <i>Occupational Outlook</i>                                                                                        |                                  |                        |                    |                                  |
| <i>Quarterly National Average</i>                                                                                  |                                  |                        |                    |                                  |
| Annual Expansion and Re-<br>placement Openings to 1980                                                             |                                  |                        |                    |                                  |
| (Not available by degree)                                                                                          | 18,000                           | 1,500                  | 10,000             | 2,600                            |
| <i>Tomorrow's Manpower Needs</i>                                                                                   |                                  |                        |                    |                                  |
| (Bureau of Labor Statistics)                                                                                       |                                  |                        |                    |                                  |
| National Average Annual<br>Expansion Openings to 1980                                                              |                                  |                        |                    |                                  |
| (Not available by degree)                                                                                          | 8,300                            | 1,370                  | 5,570              | NA                               |
| Regional and State:                                                                                                |                                  |                        |                    |                                  |
| Estimated Annual Expansion<br>and Replacement Openings<br>in SREB States, Compiled from<br>State Studies of Demand |                                  |                        |                    |                                  |
| (Not available by degree)                                                                                          | 2,445                            | 522                    | 3,466              | NA                               |
| <b>Supply Information</b>                                                                                          |                                  |                        |                    |                                  |
| National:                                                                                                          |                                  |                        |                    |                                  |
| <i>Earned Degrees in Related<br/>Areas, U. S., 1970-71</i>                                                         |                                  |                        |                    |                                  |
| Bachelor's                                                                                                         | 4,690                            | 2,443                  | 6,613              | 15,985                           |
| Master's                                                                                                           | 6,148                            | 717                    | 2,431              | 1,383                            |
| Doctor's or 1st Prof.                                                                                              | 126                              | 217                    | 446                | 25                               |
| Total                                                                                                              | 10,964                           | 3,377                  | 9,490              | 17,393                           |
| Regional and State:                                                                                                |                                  |                        |                    |                                  |
| <i>Earned Degrees in Related<br/>Areas, SREB States, 1970-71</i>                                                   |                                  |                        |                    |                                  |
| Bachelor's                                                                                                         | 1,008                            | 671                    | 1,521              | 5,029                            |
| Master's                                                                                                           | 1,151                            | 99                     | 375                | 215                              |
| Doctor's or 1st Prof.                                                                                              | 5                                | 34                     | 81                 | 3                                |
| Total                                                                                                              | 2,164                            | 804                    | 1,977              | 5,247                            |

## TEACHER SUPPLY AND DEMAND IN THE UNITED STATES—

Faced with a shortage of qualified teachers with four-year degrees, the federal government responded in the late 1950's with NDEA loans which contained a forgiveness clause allowing students to repay only half of the amount they had borrowed if they taught in an educational institution for five years. The student response was such that large numbers were encouraged to earn teacher certification. By contrast the current job turn-about for teachers is typified nationally by the federal government's abolishment of the forgiveness clause for teachers and within the region by Maryland's recent abolition of its tuition waiver program for prospective teachers.

By 1971, 39 percent of all students receiving bachelor's degrees were eligible to teach, although only 40 percent of the "eligibles" majored in education. It has been estimated by researchers at the Syracuse University Research Corporation that about 75 percent of those eligible would probably seek teaching positions at one time or another, thus raising the number of qualified BA's seeking teaching jobs from some 240,000 in 1971 to about 320,000 in 1980.

These figures contrast with an estimated annual demand for recently graduated teachers of 145,000 per year for the 1970-80 period. The figure showing 145,000 annual openings for teachers assumes that 5 percent of the 2.2 to 2.4 million elementary and secondary teachers will not teach the following year and that some 25,000 teachers will retire annually. It is more optimistic than the Bureau of Labor Statistics estimate of 90,000 annual openings (52,000 openings for kindergarten and elementary school teachers and 38,000 openings for secondary school teachers) in the 1970-1980 period.

Estimates of teacher demand as a percent of college graduates indicate that 35 percent of all college graduates were needed to fill the teaching ranks in 1963. By 1972 this percentage had dropped to 15

or 20 percent and was predicted to drop to 12 or 15 percent of all college graduates in 1980, depending on the number of teachers returning to the profession from the reserve pool.

Regardless of the supply/demand estimate used, the overall job market for teachers had changed markedly between 1968, when the NEA estimated

Table II  
College Students Receiving Degrees  
(Bachelor's and Master's) and Preparation to  
Teach in Elementary and Secondary School,  
1971 and 1972

| States                      | 1971    | 1972    | Percent Change |
|-----------------------------|---------|---------|----------------|
| United States               | 301,622 | 309,803 | + 2.7          |
| SREB States                 | 81,256  | 85,553  | + 5.3          |
| South as a Percent of U. S. | 26.9    | 27.6    | —              |
| Alabama                     | 4,876   | 4,960   | + 1.7          |
| Arkansas                    | 3,396   | 3,051   | -10.2          |
| Florida                     | 7,107   | 7,001   | -1.5           |
| Georgia                     | 5,419   | 5,975   | +10.3          |
| Kentucky                    | 6,216   | 6,269   | + .9           |
| Louisiana                   | 4,896   | 5,231   | + 6.8          |
| Maryland                    | 3,099   | 3,195   | + 3.1          |
| Mississippi                 | 4,475   | 5,492   | +22.7          |
| North Carolina              | 7,710   | 8,037   | + 4.2          |
| South Carolina              | 2,693   | 2,933   | + 8.9          |
| Tennessee                   | 6,448   | 6,534   | + 1.3          |
| Texas                       | 16,848  | 17,932  | + 6.4          |
| Virginia                    | 4,712   | 5,405   | +14.7          |
| West Virginia               | 3,261   | 3,538   | + 5.3          |

Source: NEA Research Reports

### INFORMATION RELATING SUPPLY AND DEMAND

Given the past flexibility in career development, particularly for arts and sciences graduates, the effort to relate supply and demand for given occupational classifications and degrees in a given geographical area is "iffy" business. Contributing to the

murkiness is the still relatively primitive state of the art in forecasting manpower supply and demand. National level Bureau of Labor Statistics data have been available for only about 25 years, while state level manpower projections have been published only within the last five years.

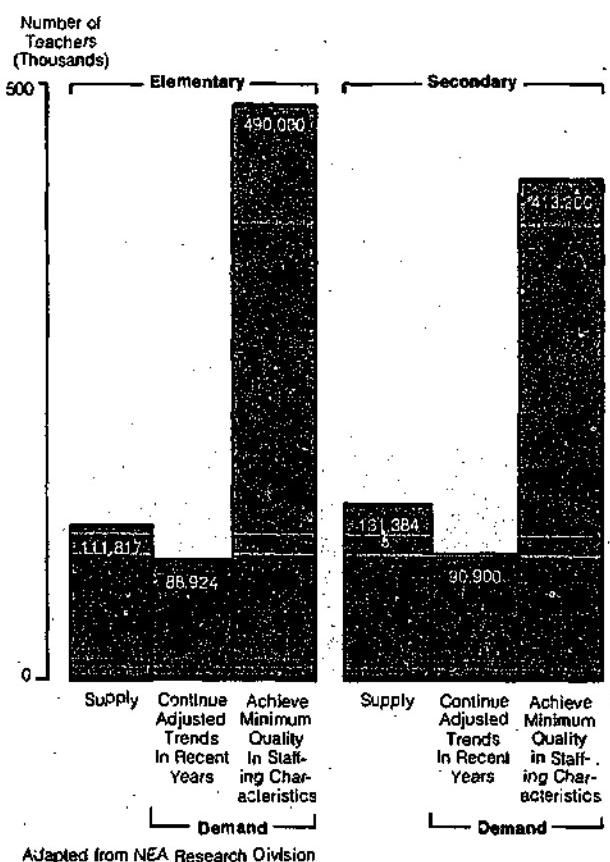
Self-fulfillment or individual opportunity tempered by institutional and faculty self-interest

## An Illustration of Current Manpower Trends in One Field

that 175,000 teachers competed for 177,600 positions, and 1972 when some 240,000 new graduates were expected to be in competition for 180,000 positions in the nation's public schools (Figure 1). Table II displays information about teacher preparation in the Southern region.

Figure 1

Estimates of Supply of Teacher Education Graduates and Demand for Beginning Teachers,  
United States 1972-73



Adapted from NEA Research Division

While the market for teachers may appear to be badly out of equilibrium, it is dangerous to paint too gloomy a picture or to assume that corrective mechanisms may not have substantial effect.

Students do heed information about probable manpower surpluses or shortages to a certain degree. Thus within the discipline of education, shifts are apparent or likely to take place from areas of oversupply such as social studies, English, physical education, business education, foreign languages, home economics and art to the areas of special education, industrial arts, mathematics, trade and vocational education, remedial reading and speech and distributive education.

Also, policy or priority changes which can turn an oversupply into a shortage or vice-versa may be implemented over a five or ten year period. Thus the vetoed \$2.95 billion child-development bill would have created a demand for 35,000 employees—many of whom might have been currently unemployed teachers. Similarly, educators estimate that 100,000 new teacher jobs could be opened if the federal government decided to boost spending on the mentally and physically handicapped. Achievement of minimum quality in staffing characteristics recommended by the National Education Association would in fact increase requirements by about 660,000 (Figure 1), according to the latest NEA teacher supply and demand report.

In balance, as Assistant HEW Secretary for Education Sidney P. Marland, Jr. has recently stated, the surplus of elementary and secondary teachers "continues to grow." He comments, "The waste involved in continuing to prepare teachers for whom no jobs exist is of course intolerable. The first step toward correcting the education manpower imbalances is the development of close collaboration between the colleges and the universities which recruit and train teachers and the school systems which hire them."

rather than the production of goods, cost efficiency, or the attainment of national goals, has been the most prominent objective of education policy in our society. Most state higher education plans have focused upon student demand, finance and organization, rather than upon estimates of business, government, industry or academic demand for college-trained individuals. Moreover, criticism of govern-

ment sponsored manpower programs is generated because they focus primarily on activities designed to improve the supply of labor, but devote little effort to analyzing demand.

The shortage of information on demand for manpower is illustrated in Table I, which relates the supply of 1970-71 degree recipients in the U.S. and the South to demand estimates for a small selection

of occupations requiring some college education. The table illustrates types of manpower planning data which may be considered for application. It also illustrates some of the limitations in the manpower planning approach.

Worth noting is the fact that the supply of degrees earned, as reported by colleges and universities, is broken down by baccalaureate and higher degree levels. However, holders of advanced degrees are often already employed and estimates of state, regional or national demand are not made by degree level. Data for degrees granted below the baccalaureate are available only for broad categories such as medical and dental technicians combined.

Information is generally not available on persons who have not completed a full four-year program in traditional higher education institutions or on recipients of sub-baccalaureate awards from proprietary institutions. In addition it should be noted that if occupational classifications in the "Occupational Outlook Handbook" do not correspond with state studies' classifications (as with marketing research workers in Table I), estimates of demand at the state, regional or local level are difficult to make.

Data on manpower demand for prospective annual openings in a given field are more readily available at the national level than at the state or local level, where most program decisions are made. It is possible to make very rough estimates of openings at a state or local level by relating population or employment to the national level, even though state or local areas do not reflect the national employment situation in all or most instances.

At the state level, departments of employment security in 12 of the 14 SREB states have in recent years completed studies containing state and local job outlook information for various periods between 1967-1980 following procedures outlined in the Bureau of Labor Statistics' publication, *Tomorrow's Manpower Needs*.

The state studies are based on the number of persons known to be employed in various industrial classifications in a given base period. Estimates of the number of persons to be employed in some 160 occupational classifications are generally made by estimating industrial growth through 1975 or 1980 and relating the number of persons employed by each industry to a national matrix of industry employment by occupation.

Regardless of its limitations, educational program planners should be aware of available information about demand for college-level manpower. Such information when combined with expert opinion,

data from appropriate professional associations and other sources should provide some guidance for making judgments in initiating or cutting back programs.

### IMPROVED ADAPTATION OF POSTSECONDARY EDUCATION TO SOCIETY'S NEEDS

What can educational institutions and agencies do to improve adaptation of postsecondary education to society's and the individual's needs? The use of manpower information is a beginning, and increased reliance on such data in certain directions will be a further step. Regional agencies are in a position to augment institutional and state agency efforts through cooperative undertakings.

Manpower and education studies for particular fields in which regional contract programs, student aid contracts or other cooperative arrangements were proposed have been conducted by SREB for a number of years. With the recent slowdown in growth of higher education and with a tighter job market, it has become obvious that there is a greater need for care in planning and coordination of academic program growth across the entire range of institutional offerings.

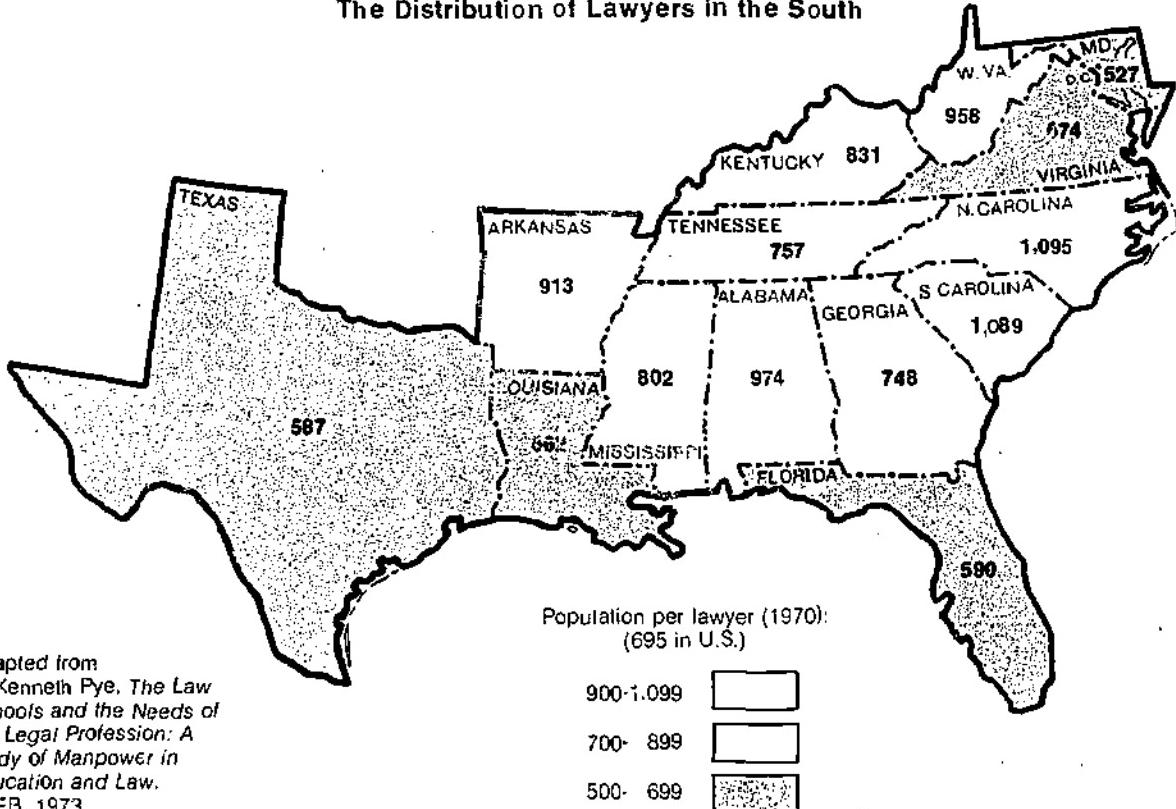
Institutions need to study the curriculum mix which they support. State systems need to be more conscious of the role and scope of each individual institution in the system and of the institution's position in the total pattern. For instance, directors of higher educational coordinating agencies in the SREB states now routinely exchange information on proposed new doctoral programs and on programs terminated. Further possibilities for improved allocation of higher educational resources throughout the region are being pursued in plans for a regional academic common market.

These efforts are handicapped by lack of adequate manpower information for planning. Moreover, there are genuine and honest differences in academic opinion on the priorities which should be assigned to the use of such information where it does exist or can be developed.

SREB recently surveyed 34 professional associations about their interest in bringing about a better correlation between the production of degrees and prospects for employment. Paradoxically, many respondents reacted negatively to the general idea of a "manpower approach," to academic planning although most of them reported efforts to compile manpower supply and demand information for their disciplines. Most respondents indicated concern

Figure 2

The Distribution of Lawyers in the South



Adapted from  
A. Kenneth Pye, *The Law Schools and the Needs of the Legal Profession: A Study of Manpower in Education and Law*.  
SREB, 1973

with job placement of students who had received or were about to receive doctoral degrees.

The Carnegie Commission, in *College Graduates and Jobs*, promotes a "free choice principle" in preference to a "manpower principle" for development of the curriculum, but immediately underlines important exceptions to the rule:

1. When there are sudden shifts of student interests, as in the recent case of law, that cannot be sustained more than temporarily and where a full campus response to such a demand would, in any event, be impossible in the short run.

2. Where very great costs of a long-run nature are involved, as in the training of medical doctors and of Ph.D.'s.

Manifestly, it is in the best interests of both students and of institutions to have educational planning take into account the requirements of society and the economy.

The issue can perhaps be best resolved by giving the manpower facts an opportunity to speak for themselves and to be tested in the give and take of actual postsecondary educational planning.

Veterinary medicine is a field for which projections can be made more easily than for others because this field is subject neither to the whims of government shifts in research and development support (as with some engineering fields), nor to difficulties in matching academic preparation with occupational classifications (as with many liberal arts degrees). A recent publication, *Veterinarians for the South, A Further Appraisal* by W.S. Bailey, illustrates the kinds of conclusions which careful study of a field may yield:

Even though completely objective projections of manpower requirements are not available, there is general agreement that there is a shortage of graduate veterinarians in the nation and in the SREB states, and that this will continue at least through the 1970's, even with the expanded capacity achieved by the existing schools and with the new one being built at Louisiana State University. This judgment is based on a number of assumptions about social and economic conditions and about the delivery of veterinary services. The profession and schools of veterinary medicine must be alert to changes which are likely to affect the delivery of veterinary services and must respond to these with

appropriate and timely adjustments if the profession is to meet its responsibilities to society.

Present evidence supports the view that an additional school of veterinary medicine (at the University of Florida) would be desirable in meeting the professional manpower needs of the region and the nation and in providing opportunity for a larger number of interested students to enter the profession. Additional capacity at the University of Georgia might also be desirable; but it is very difficult to affirm with confidence that new schools at L.S.U. and Florida, major expansion at Georgia, and the recent modest expansion at other regional schools will all be needed to meet the long-range manpower requirements, particularly if new schools are established soon in other regions, such as New England or the Southwest. Moreover, a contingency plan for cooperative regional effort for effecting equitable retrenchment in enrollment would be desirable in case this eventuality develops as the result of unanticipated changes.

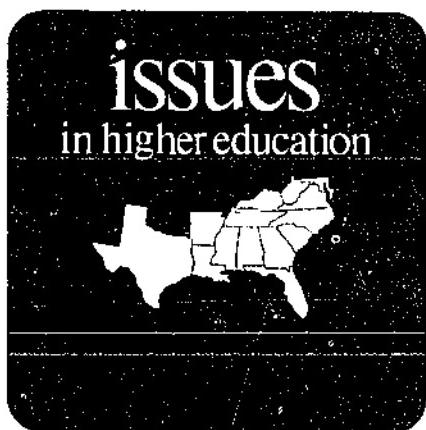
The Board has begun documentation of other fields where well-conceived application of manpower information to educational planning has begun.

The volume of available data for translating societal manpower needs into educational planning is not great, nor is it adequate for coping with the pressures which planning authorities face from their varying constituencies—faculty with their own aspirations, the local community with its influence and interest in academic prestige, etc.

During the past year, SREB has responded to inquiries for manpower planning information by assembling provisional indicators of supply and demand in some fields and by commissioning regional position papers presenting overviews of a number of fields; agriculture, allied health fields, computer sciences, dentistry, engineering, law, medicine, nursing, optometry and social work. These represent one installment in a planned regional assault upon the information gap which confronts educational planners in most disciplines.

Figure 2, adapted from the paper on "the law schools and needs of the legal profession", shows current differences in distribution of lawyers in Southern states. By drawing together ongoing studies and stimulating other needed investigations, an appreciably better use of Southern educational resources is possible.

Finally, a mere statistical response to needs for information about manpower supply and demand provides no guarantee of operational application. Manpower projections, knowledge of new delivery systems, know-how in techniques for speeding up or improving the training of personnel in a given profession, development of barometers for reading early symptoms of change in anticipated manpower requirements are some ingredients of a comprehensive program in manpower and education. Leadership and informed judgment in application are needed to translate them into practice.



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